Application No. 09/840,399   Attorney's Docket No. 0119-117
Amendment in response to February 7, 2005, Action

<u>LISTING OF CLAIMS</u>

This Listing of Claims replaces all prior versions and listings of the claims in this application.

1. (currently amended) A method for synchronization in radio communication systems, the method comprising the steps of:

encapsulating symbols in an information stream;

modulating the information stream; <u>and</u>

sending the modulated information stream ~~with a first robustness level~~ over a communication channel; ~~and~~

~~reducing the level of robustness of the information stream to a second robustness level according to a predetermined function.~~

<u>wherein symbols in a group of symbols have robustness levels that decrease from a start of the group to an end of the group according to a predetermined pattern, and signaling information indicating the decrease in robustness level is omitted from the information stream.</u>

2. (canceled)

3. (currently amended) The method of claim [[2]] <u>1</u>, wherein the step of encapsulating symbols comprises the steps of:

adding Forward Error Correction (FEC) coding to ~~a plurality of segments~~ <u>the group of symbols</u> in the information stream using at least two different coding rates; and

varying the coding rates among the ~~plurality of segments to change the robustness of the information stream from the first~~ <u>group of symbols to decrease the</u> robustness level ~~to the second robustness level~~.

4. (currently amended) The method of claim 3, wherein the ~~plurality of successive segments~~ <u>group of symbols</u> to which the FEC coding is added includes a ~~segment~~ <u>symbol</u> adjacent to where a demodulation of the information stream begins.

5. (currently amended) The method of claim [[2]] <u>1</u>, wherein the step of modulating the information stream comprises the steps of:

modulating ~~a plurality of segments~~ <u>the group of symbols</u> in the information stream using at least two different modulation schemes; and

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varying the modulation schemes among the ~~plurality of segments to change the robustness of the information stream from the first~~ group of symbols to decrease the robustness level ~~to the second robustness level~~.

6. (currently amended) The method of claim 5, wherein the ~~plurality of segments~~ the group of symbols modulated using at least two different modulation schemes includes a ~~segment~~ symbol adjacent to where a demodulation of the information stream begins.

7. (currently amended) The method of claim 5, wherein the step of encapsulating symbols comprises the step of:

adding Forward Error Correction (FEC) coding to ~~at least one segment~~ the group of symbols in the information stream;

wherein the varying of the modulation schemes and the adding of FEC coding ~~change the robustness of the information stream from the first~~ decrease the robustness level ~~to the second robustness level~~.

8. (currently amended) The method of claim 5, wherein the step of encapsulating symbols comprises the steps of:

adding Forward Error Correction (FEC) coding to ~~a plurality of segments~~ the group of symbols in the information stream using at least two different coding rates; and

varying the coding rates among the ~~plurality of segments~~ symbols;

wherein the varying of the modulation schemes and the varying of the coding rates ~~change the robustness of the information stream from the first~~ decrease the robustness level ~~to the second robustness level~~.

9. (currently amended) The method of claim 8, wherein the ~~plurality of segments~~ symbols among which the modulation schemes vary and the ~~plurality of segments~~ symbols among which the coding rates vary are different ~~pluralities of segments~~.

10. (currently amended) The method of claim 8, wherein the ~~plurality of segments~~ symbols among which the modulation schemes vary and the ~~plurality of segments~~ symbols among which the coding rates vary are the same ~~plurality of segments~~.

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11. (currently amended) The method of claim 1, wherein the step of encapsulating symbols comprises the steps of:

encoding ~~the information stream~~ symbols in the group using convolutional coding ~~at a first coding rate~~;

puncturing the encoded ~~information stream~~ symbols; and

varying a rate at which the encoded ~~information stream is~~ symbols are punctured ~~to achieve a second coding rate~~ in accordance with the predetermined pattern, whereby the robustness level ~~is changed from the first robustness level to the second robustness level~~ decreases.

12. (currently amended) The method of claim 11, wherein the puncturing of the encoded ~~information stream~~ symbols occurs adjacent to a portion of the information stream where a demodulation of the information stream begins.

13. (currently amended) The method of claim 1, further comprising the steps of:

receiving the modulated information stream from the communication channel; and

demodulating the information stream only after ~~a first number of~~ the group of symbols [[have]] has been received~~, wherein the first number of symbols is less than a second number of symbols that would have to be received to demodulate a corresponding information stream sent over the communication channel only at the second robustness level~~.

14. (currently amended) The method of claim 1, wherein the information stream is comprised of packets and the group of symbols is included in a single packet.

15. (currently amended) The method of claim 14, wherein the ~~packets comprise~~ packet that includes the group of symbols includes a training sequence.

16. (currently amended) An apparatus for synchronization in radio communication systems, comprising:

logic that encapsulates symbols in an information stream;

a modulator for modulating the information stream; and

a transmitter for sending the modulated information stream with a first robustness level over a communication channel; ~~and~~

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~~logic that reduces the level of robustness of the information stream to a second~~
~~robustness level according to a predetermined function.~~

wherein the logic encapsulates symbols in a group of symbols with robustness
levels that decrease from a start of the group to an end of the group according to a
predetermined pattern, and signaling information indicating the decrease in robustness
level is omitted from the information stream.

    17. (canceled)

    18. (currently amended) The apparatus of claim [[17]] 16, wherein the logic that
encapsulates symbols comprises:

    logic that adds Forward Error Correction (FEC) coding to ~~a plurality of segments~~
the group of symbols in the information stream using at least two different coding rates;
and

    logic that varies the coding rates among the ~~plurality of segments to change the~~
~~robustness of the information stream from the first~~ group of symbols to decrease the
robustness level ~~to the second robustness level~~.

    19. (currently amended) The apparatus of claim 18, wherein the ~~plurality of~~
~~segments~~ group of symbols to which the FEC coding is added includes a ~~segment~~
symbol adjacent to where a demodulation of the information stream begins.

    20. (currently amended) The apparatus of claim [[17]] 16, wherein the
modulator comprises:

    logic that modulates ~~a plurality of segments~~ the group of symbols in the
information stream using at least two different modulation schemes; and

    logic that varies the modulation schemes among the ~~plurality of segments to~~
~~change the robustness of the information stream from the first~~ group of symbols to
decrease the robustness level ~~to the second robustness level~~.

    21. (currently amended) The apparatus of claim 20, wherein the ~~plurality of~~
~~segments~~ group of symbols modulated using at least two different modulation schemes
includes a ~~segment~~ symbol adjacent to where a demodulation of the information stream
begins.

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22. (currently amended) The apparatus of claim 20, wherein the logic that encapsulates symbols comprises:

logic that adds Forward Error Correction (FEC) coding to ~~at least one segment~~ the group of symbols in the information stream;

wherein the varying of the modulation schemes and the adding of FEC coding ~~change the robustness of the information stream from the first~~ decrease the robustness level ~~to the second robustness level~~.

23. (currently amended) The apparatus of claim 20, wherein the logic that encapsulates symbols comprises:

logic that adds Forward Error Correction (FEC) coding to ~~a plurality of segments~~ the group of symbols in the information stream using at least two different coding rates; and

logic that varies the coding rates among the ~~plurality of segments~~ symbols;

wherein the varying of the modulation schemes and the varying of the coding rates ~~change the robustness of the information stream from the first~~ decrease the robustness level ~~to the second robustness level~~.

24. (currently amended) The apparatus of claim 23, wherein the ~~plurality of segments~~ symbols among which the modulation schemes vary and the ~~plurality of segments~~ symbols among which the coding rates vary are different ~~pluralities of segments~~ symbols.

25. (currently amended) The apparatus of claim 23, wherein the ~~plurality of segments~~ symbols among which the modulation schemes vary and the ~~plurality of segments~~ symbols among which the coding rates vary are the same ~~plurality of segments~~ symbols.

26. (currently amended) The apparatus of claim 16, wherein the logic that encapsulates symbols, comprises:

an encoder for coding ~~the information stream~~ symbols in the group using convolutional coding ~~at a first coding rate~~;

logic that punctures the coded ~~information stream~~ symbols; and

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logic that varies a rate at which the encoded ~~information stream is~~ symbols are punctured ~~to achieve a second coding rate~~ in accordance with the predetermined pattern, whereby the robustness level ~~is changed from the first robustness level to the second robustness level~~ decreases.

27. (currently amended) The apparatus of claim 26, wherein the puncturing of the encoded ~~information stream~~ symbols occurs adjacent to a portion of the information stream where a demodulation of the information stream begins.

28. (currently amended) The apparatus of claim 16, wherein the information stream is comprised of packets and the group of symbols is included in a single packet.

29. (currently amended) The apparatus of claim 28, wherein the ~~packets comprise~~ packet that includes the group of symbols includes a training sequence.

30. (currently amended) An apparatus for synchronization in radio communication systems, comprising:

a receiver for receiving a modulated information stream including symbols ~~with a first robustness level sent over a communication channel and then reduced the to a second robustness level according to a predetermined function~~; and

a demodulator for demodulating the information stream after a first number of symbols have been received, wherein symbols in a group of symbols have robustness levels that decrease from a start of the group to an end of the group according to a predetermined pattern; and signaling information indicating the decrease in robustness level is omitted from the information stream; whereby the first number of symbols is less than a second number of symbols that would have to be received to demodulate a corresponding information stream sent over the communication channel only at the ~~second~~ robustness level of a symbol at the end of the group.

31. (currently amended) A system for synchronization in radio communication systems, comprising:

logic that encapsulates symbols in an information stream;

a modulator for modulating the information stream;

a transmitter for sending the modulated information stream ~~with a first robustness level~~ over a communication channel;

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logic that reduces the level of robustness of <u>symbols in a group of symbols in</u> the information stream ~~to a second robustness level~~ according to a predetermined function;

a receiver for receiving the modulated information stream from the communication channel; and

a demodulator for demodulating the information stream after a first number of symbols have been received, wherein <u>the symbols in the group of symbols have robustness levels that decrease from a start of the group to an end of the group according to the predetermined function; and signaling information indicating the decrease in robustness level is omitted from the information stream; whereby</u> the first number of symbols is less than a second number of symbols that would have to be received to demodulate a corresponding information stream sent over the communication channel only at the ~~second~~ robustness level <u>of a symbol at the end of the group</u>.

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